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ABSTRACT

Apparatus for processing a heavy hydrocarbon feed, in accordance with the present invention, includes firstly a heater for heating the heavy hydrocarbon feed. The heated, heavy hydrocarbon feed produced is fed to an atmospheric fractionating tower for fractionating the heated heavy hydrocarbon feed fed to the inlet of the atmospheric fractionating tower producing light atmospheric fractions and atmospheric bottoms. In addition, the apparatus includes a vacuum fractionating tower for fractionating heated atmospheric bottoms heated by a further heater and producing lighter vacuum fractions and vacuum residue. Furthermore, the apparatus includes a solvent deasphalting (SDA) unit for producing deasphalting oil (DAO) and asphaltenes from the vacuum residue as well as a thermal cracker for thermally cracking the deasphalting oil and producing a thermally cracked product which is recycled to the inlet of said atmospheric fractionating tower. Moreover, the apparatus includes a further thermal cracker for thermally cracking the lighter vacuum fractions for producing a further thermally cracked product that is recycled to said atmospheric fractionating tower.

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